

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (Canceled)

Claim 2 (Canceled)

Claim 3 (Canceled)

Claim 4 (Previously Presented): A phosphor comprising a silicon-containing solid matrix and semiconductor superfine particles dispersed therein at a concentration of  $5 \times 10^{-4}$  to  $1 \times 10^{-2}$  mol/L, said semiconductor superfine particles having a fluorescence quantum yield of 3% or greater and a diameter of 1.5 to 5 nm,

wherein the semiconductor superfine particles have a surface coating of a material other than material found in the silicon-containing solid matrix,

wherein the silicon-containing solid matrix is a glass matrix formed by a sol-gel process using an organoalkoxysilane, and

wherein the organoalkoxysilane is a compound expressed by the formula:



wherein X is a group expressed by  $\text{CH}_2=\text{CH}-$ , an oxirane-containing group, a group expressed by  $\text{H}_2\text{NC}_m\text{H}_{2m}-$ , a group expressed by  $\text{CH}_2=\text{C}(\text{CH}_3)\text{COOC}_p\text{H}_{2p}-$ , a group expressed by  $\text{HSC}_q\text{H}_{2q}-$ , or a phenyl group;  $R^1$  is a lower alkyl group;  $n$  is 1, 2, or 3;  $m$  is an integer from 1 to 6;  $p$  is an integer from 1 to 5; and  $q$  is an integer from 1 to 10.

Claim 5 (Previously Presented): The phosphor according to claim 4, wherein the semiconductor superfine particles are substantially monodispersed in the silicon-containing solid matrix.

Claim 6 (Original): The phosphor according to claim 5, wherein the semiconductor superfine particles comprise at least one member selected from the group consisting of cadmium telluride, zinc telluride, zinc selenide, cadmium selenide, cadmium sulfide, indium arsenide, and indium phosphide.

Claim 7 (Original): The phosphor according to claim 6, wherein the semiconductor superfine particles comprise cadmium telluride, and the superfine particles are obtainable by adding a surfactant to an aqueous solution of cadmium perchlorate, adding hydrogen telluride or sodium hydrogen telluride, and then refluxing the mixture.

Claim 8 (Previously Presented): The phosphor according to claim 4, wherein the concentration of semiconductor superfine particles in the silicon-containing solid matrix is  $1 \times 10^{-3}$  to  $8 \times 10^{-3}$  mol/L.

Claim 9 (Cancel)

Claim 10 (Cancel)

Claim 11 (Cancel)

Claim 12 (Cancel)

Claim 13 (Cancel)

Claim 14 (Cancel)

Claim 15 (Cancel)

Claim 16 (Cancel)

U.S. Patent Application Serial No. **10/518,216**  
Response to OA dated July 7, 2010

Claim 17 (Cancel)

Claim 18 (Cancel)

Claim 19 (Cancel)

Claim 20 (Cancel)

Claim 21 (Cancel)

Claim 22 (Cancel)

Claim 23 (Cancel)

Claim 24 (Cancel)

Claim 25 (Cancel)

Claim 26 (Cancel)

Claim 27 (Cancel)

Claim 28 (Cancel)

Claim 29 (Canceled)

Claim 30 (Previously Presented): A light-emitting device comprising the phosphor according to claim 4, and a light source for emitting excitation light with an intensity of 3 to 800 W/cm<sup>2</sup>.

Claim 31 (Previously Presented): A light-emitting device comprising the phosphor according to claim 4, and a light source selected from the group consisting of a mercury lamp, a semiconductor light-emitting diode, a semiconductor laser, and a solid-state laser.

Claim 32 (Previously Presented): The light-emitting device according to claim 31, wherein the light source is a semiconductor light-emitting diode, semiconductor laser, or solid-state laser.

Claim 33 (Previously Presented): The light-emitting device according to claim 30, wherein the light source is an ultraviolet semiconductor light-emitting diode with an excitation

wavelength of 200 nm or greater but less than 400 nm, or an ultraviolet semiconductor laser with an excitation wavelength of 200 nm or greater but less than 400 nm.

Claim 34 (Previously Presented): The light-emitting device according to claim 30, wherein the light source is an intermittently pulsing light source.

Claim 35 (Previously Presented): The light-emitting device according to claim 30, wherein the optical density (OD) of the phosphor at the excitation wavelength is  $0.7 < OD < 5$ .

Claim 36 (Previously Presented): The light-emitting device according to claim 30, wherein the light-emitting device is a display panel or a light.

Claim 37 (Previously Presented): A method for manufacturing a display panel, wherein a slurry containing pulverized phosphor according to claim 4, a water-soluble photosensitive resin, and water, is applied to a substrate, and the resin is cured by irradiation with light.

Claim 38 (Previously Presented): A thin film comprising the phosphor according to claim 4.

Claim 39 (Previously Presented): The thin film according to claim 38, wherein the film thickness is 10 microns or less.

Claim 40 (Previously Presented): A method for forming a thin film comprising the phosphor according to claim 4, wherein the film is produced by a sol-gel process using an organoalkoxysilane.

Claim 41 (Previously Presented): A method for forming on a substrate a thin film comprising the phosphor according to claim 4, wherein the film is produced by a sol-gel process using an organoalkoxysilane.

Claim 42 (Previously Presented): A method for manufacturing the phosphor according to claim 4, wherein the semiconductor superfine particles are fixed in the silicon-containing solid matrix and are then exposed to a reducing gas.

Claim 43 (Previously Presented): The method for manufacturing a phosphor according to claim 42, wherein the semiconductor superfine particles are fixed in the silicon-containing solid matrix by a sol-gel process using an organoalkoxysilane and are then exposed to hydrogen gas or hydrogen sulfide gas.

Claim 44 (Previously Presented): A phosphor obtainable by the manufacturing method according to claim 42.

Claim 45 (Previously Presented): A light-emitting device comprising the phosphor according to claim 44 and a light source for emitting excitation light with an intensity of 3 to 800 W/cm<sup>2</sup>.

Claim 46 (Previously Presented): The light-emitting device according to claim 31, wherein the light source is an ultraviolet semiconductor light-emitting diode with an excitation wavelength of 22 nm or greater but less than 400 nm, or an ultraviolet semiconductor laser with an excitation wavelength of 200 nm or greater but less than 400 nm.

Claim 47 (Previously Presented): The light-emitting device according to claim 31, wherein the light source is an intermittently pulsing light source.

Claim 48 (Previously Presented): The light-emitting device according to claim 31, wherein the optical density (OD) of the phosphor at the excitation wavelength is 0.7<OD<5.

Claim 49 (Previously Presented): The light-emitting device according to claim 31, wherein the light-emitting device is a display panel or a light.